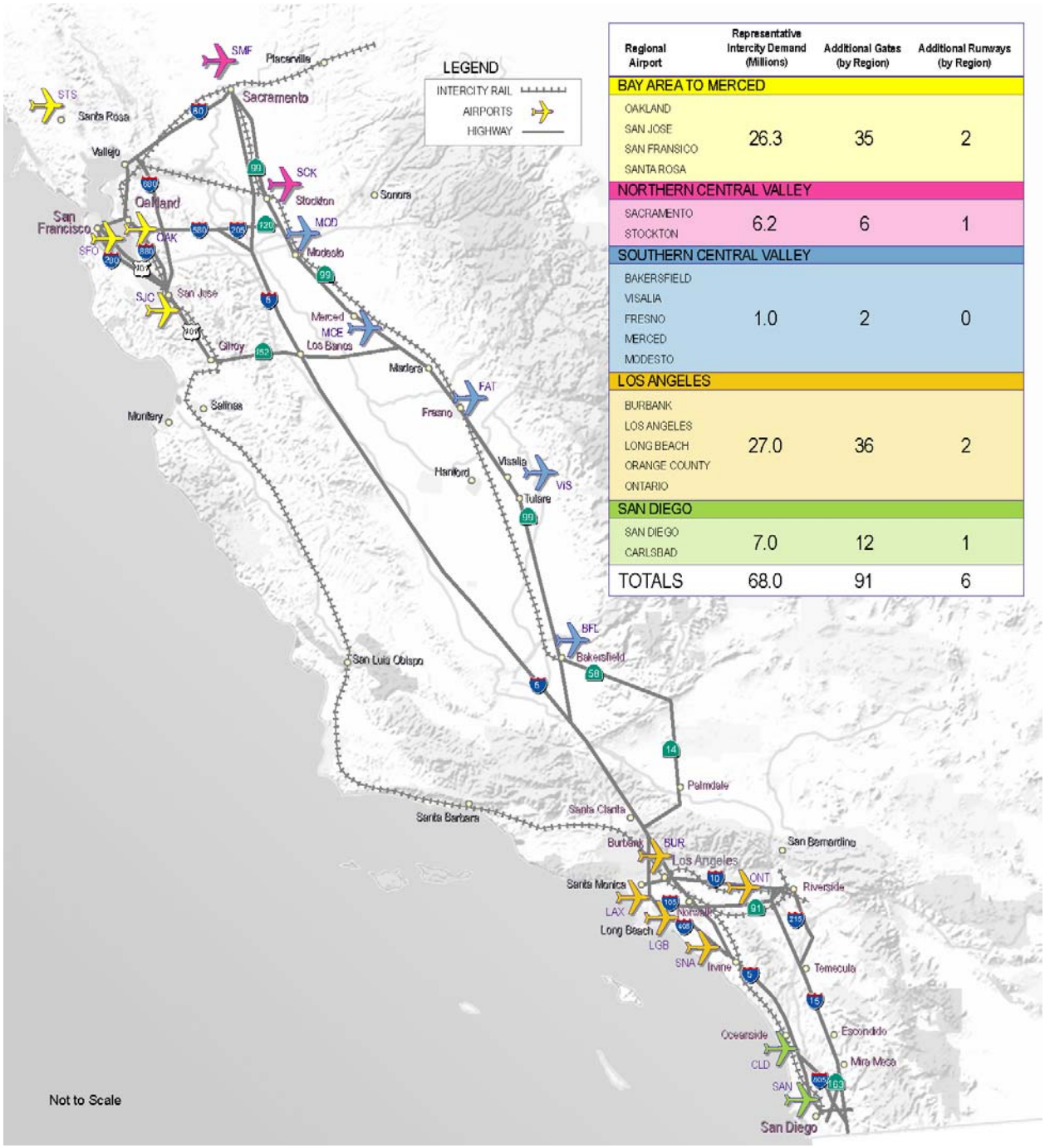
Figure 3
MODAL ALTERNATIVE-AVIATION COMPONENT



Regional Airport	Representative Intercity Demand (Millions)	Additional Gates (by Region)	Additional Runways (by Region)
BAY AREA TO MERCED			
OAKLAND SAN JOSE SAN FRANSICO SANTA ROSA	26.3	35	2
NORTHERN CENTRAL VALLEY			
SACRAMENTO STOCKTON	6.2	6	1
SOUTHERN CENTRAL VALLEY			
BAKERSFIELD VISALIA FRESNO MERCED MODESTO	1.0	2	0
LOS ANGELES			
BURBANK LOS ANGELES LONG BEACH ORANGE COUNTY ONTARIO	27.0	36	2
SAN DIEGO			
SAN DIEGO CARLSBAD	7.0	12	1
TOTALS	68.0	91	6

Figure 4
HST ALTERNATIVE – CORRIDORS AND STATIONS FOR CONTINUED INVESTIGATION

2.0 BASELINE/AFFECTED ENVIRONMENT

2.1 STUDY AREA

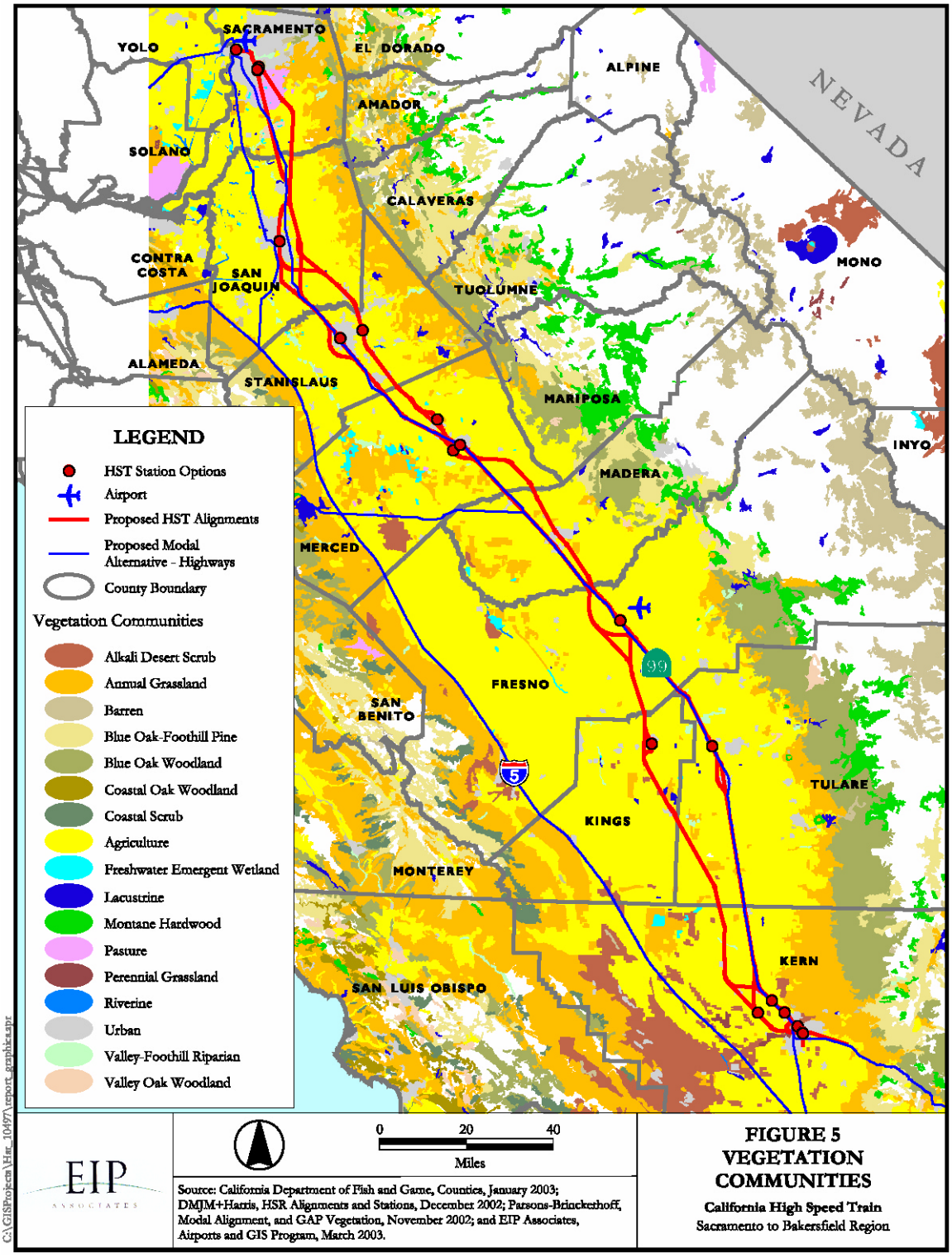
The study area for the Sacramento to Bakersfield region crosses many different ecosystems. These include row crops, nut orchards, vineyards, and other cultivated lands; native and introduced plant communities; permanent and seasonal streams and rivers with their associated riparian communities; and seasonal wetlands, vernal pools, and other jurisdictional waters.

This area hosts many species protected under state and/or federal endangered species legislation. While many of these are restricted to specific habitats (vernal pools or serpentine-based soils), others (like San Joaquin kit fox) can be found in a variety of habitats or (like salmon and steelhead) use the streams that pass through the Sacramento to Bakersfield region as migration corridors to other areas. Within this document, only those species listed as endangered, threatened, rare, proposed for listing or a candidate are considered. Additionally, plants on the California Native Plant Society's List 1B are also included (List 1B species are considered rare or endangered in California and elsewhere in their range). The following sections discuss the general physical characteristics of the region (Section 2.2), sensitive vegetation communities (Section 2.3) and sensitive plant species (Section 2.4), sensitive wildlife (Section 2.5), and jurisdictional waters and wetlands (Section 2.5).

The project corridor between Sacramento and Bakersfield will likely cross through several Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) planning areas. An HCP is a method by which a private landowner or group of landowners may receive an incidental take permit under Section 10 of the Federal Endangered Species Act. An NCCP is a similar document, but relates to the California State Endangered Species Act. These two are often prepared simultaneously. An HCP/NCCP allows for ongoing activities (like farming and infrastructure maintenance) that may result in "take" of a listed species while simultaneously allowing for protection and preservation of the species. According to the USFWS as of 2002, over 400 HCPs had been approved within the United States protecting more than 200 species (USFWS 2002). Within the Pacific Region (USFWS Region 1), there have been 122 approved plans and 19 amendments (USFWS 2003). A review of this list indicates that at least 26 of them are within counties affected by this proposed action. However, this list does not include those efforts underway such as the Eastern Merced County NCCP/HCP or the Kern Valley Floor Multi-species HCP (MSHCP). A similar list prepared by the Resources Agency reports 36 NCCP/HCPs within the San Joaquin Bioregion (Resources Agency 1998).

2.2 GENERAL DESCRIPTION OF REGIONAL PHYSICAL CHARACTERISTICS AND VEGETATION COMMUNITIES

The Central Valley, between Sacramento and Bakersfield, crosses a relatively flat plain that historically supported lush stands of riparian vegetation, extensive wetlands, and a plethora of wildlife. Since colonization by European settlers and the introduction of agriculture this has changed dramatically. Today the Central Valley from Sacramento to Bakersfield supports a multitude of agricultural activities and is home to a large number of people. This has resulted in the removal of native vegetation communities, draining of wetlands, and reductions in wildlife distribution and abundance. While urbanization and agriculture have reduced the abundance of native habitats, remnants still exist often supporting sensitive plants and animals. Vegetation data for the study area (see Figure 5) indicates that 13 vegetation communities can be found in the Central Valley between Sacramento and Bakersfield (Lake and River categories are not included in this total). The largest area is covered by agricultural lands (over 185,000 acres) and the smallest by blue oak woodland (approximately 10 acres). The California Natural Diversity Database (CNDDB) reports occurrences of 24 species of sensitive flora and fauna (14 sensitive plants, and 10 animals) within the region (see Figure 6).


SACRAMENTO
YOLO
EL DORADO
ALPINE
NEVADA
AMADOR
SOLANO
CALAVERAS
CONTRA COSTA
SAN JOAQUIN
TUOLUMNE
MONO
ALAMEDA
STANISLAUS
MARIPOSA
INYO
MADERA
MERCED
FRESNO
SAN BENITO
TULARE
KINGS
MONTEREY
KERN
SAN LUIS OBISPO
LEGEND
HST Station Options
Airport
Proposed HST Alignments
Proposed Modal Alternative - Highways
County Boundary
Vegetation Communities
Alkali Desert Scrub
Annual Grassland
Barren
Blue Oak-Foothill Pine
Blue Oak Woodland
Coastal Oak Woodland
Coastal Scrub
Agriculture
Freshwater Emergent Wetland
Lacustrine
Montane Hardwood
Pasture
Perennial Grassland
Riverine
Urban
Valley-Foothill Riparian
Valley Oak Woodland
0
20
40
Miles
EIP ASSOCIATES
Source: California Department of Fish and Game, Counties, January 2003; DMJM+Harris, HSR Alignments and Stations, December 2002; Parsons-Brinckerhoff, Modal Alignment, and GAP Vegetation, November 2002; and EIP Associates, Airports and GIS Program, March 2003.
C:\GISProjects\Hsr_10497\report_graphics.apr
FIGURE 5
VEGETATION COMMUNITIES
California High Speed Train
Sacramento to Bakersfield Region